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Leader-versus-member and fair-versus-biased categorisations as safeguards against negative effects of demographic diversity on group attraction

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Abstract How leadership and fairness can safeguard against negative effects of demographic diversity on group attraction was investigated. When the race of the leader and the member of a group were manipulated, categorisation by race of the former was more important than that of the latter. Also, both the in-group preference and the out-group derogation characterised group attraction. The fair reputation of the leader reduced the difference between the in-group and out-group categorisation more than the biased reputation did. Apparently, the leadership and fairness categorisations can be effective safeguards against negative consequences of demographic diversity on group attraction in modern organisations.
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Introduction

Over the years, there has been an increase in participation by the underrepresented sections of the society in the workforce globally. Consequently, people within organisations nowadays differ markedly in visible attributes of age, race, and sex. Such demographic diversity is now considered as important for the commercial advantage and reputation of organisations (Love, 2010). To encourage diversity, moreover, companies have been placing people of diverse backgrounds in leadership positions (Groysberg & Connolly, 2013). What are the consequences of such diversity of race and status in workgroups for attraction among people about to enter the job market?

Survey in organisations or laboratory experiments?

Most studies of organisational demography have relied on surveys of people within an organisation (Jackson & Joshi, 2011; Joshi & Roh, 2009; Kalev, Dobin, & Kelly, 2006; Mannix & Neale, 2005; van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). Data from real-world organisations have two limitations.

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First, diversity in race considered in a particular study, for example, might be confounded with other diversities in age and sex. Such complexity of natural settings required researchers to either not measure or "not report statistics for all of the many types of diversity that may be present in the work teams being investigated" (Jackson & Joshi, 2011, p. 655). Second, survey data are essentially correlational. Thus, one can never be sure of whether diversity actually caused changes in the group processes surveyed or vice versa due to the successive processes of attraction, selection, and attrition over time (Schneider, 1987).

For conceptual clarity about the diversity effects on group processes, van Knippenberg and Schippers (2007) recommended complementing "survey research" by "controlled experiments" (p. 533). As a remedy for the less than desired results of the diversity practices, there have also been recommendations for making "organizations and their leaders as part of the diversity solution" (Mannix & Neale, 2005, p. 48), assigning greater "organizational responsibility for change" to managers themselves (Kalev et al., 2006, p. 611), or providing effective leadership to "avoid the interpersonal problems" (Jackson & Joshi, 2011, p. 674). We agree: The causal processes triggered by team diversity have not been fully understood, nor have effective organisational safeguards against any diversity's "... negative consequences for group process" (Williams & O'Reilly, 1998, p. 121) been experimentally examined. Therefore, the present authors pursued both goals of conceptual clarity and practical utility in three novel ways.

First, we performed controlled experiments in laboratory (Ilgen, 1986) to manipulate information about *only* race of the leader and the member of teams before measuring their respective effects on group attraction. Such response represents how people choose their future workgroups (Hinds, Carley, Krackhardt, & Wholey, 2000) and hence is an ideal proxy of group processes (Levine & Moreland, 1994; Kozlowski & Bell, 2003) in organisations that prospective employees are yet to experience. We used race because it is a particularly salient and socially relevant category for new students (Mollica, Gray, & Trevino, 2003), and racial diversity usually has negative consequences for group processes (Jackson & Joshi, 2011; Mannix & Neale, 2005). Our research setting was Singapore, a multi-racial city-state where people of Chinese, Malay, and Indian races work together in multinational corporations (Nizamuddin, 2007).

Second, we kept the team size to three (Paletz, Peng, Erez, & Maslach, 2004), and varied team diversities in a within-participants design. Anderson, Lindner, and Lopes (1973) used such design in the first study of group attraction. The advantage with such design is that it mimics "real" life interactions and allows comparative judgments between people and events (Greenwald, 1976). It is unsurprising, therefore, that the potential of a within-participants design has also been reiterated recently for studying "leadership in natural contexts where followers make comparative judgments among two or more leaders or potential leaders" (Hogg, van Knippenberg, & Rast, 2012, p. 284).

Finally, we applied information integration theory (Anderson, 1981, 1982, 2013) to identify the ways in which information about the race of the leader and that of the member influence group attraction. Diversity is commonly defined as "... any attribute that another person may use to detect individual difference" (Williams & O'Reilly, 1998, p. 81), and such attribute can be a surface-level category of *race* and *sex*, and organisational categories of *formal credentials* and *title* (Jackson & Joshi, 2011). By crossing race of the leader with that of the member in Experiment 1, we examined whether racial similarity and difference are weighted equally or unequally (Singh, 1991, 2011a), and whether racial diversity among leaders can minimise the effect of racial diversity among members in group attraction. By further crossing reputation with race of the leader in Experiment 2, we investigated whether weight of racial diversity among leaders can be minimised more by presenting them as fair rather than in-group biased (De Cremer, Van Dijke, & Mayer, 2010; Lind, 2001; van Knippenberg, De Cremer, & van Knippenberg, 2007). Thus, we submit that ours is the first attempt to answer the theoretical question of whether racial diversity "really" activates social identity processes in the workforce (van Knippenberg & Schippers, 2007) and the practical question of how to minimise the adverse effects of racial diversity (Kalev et al., 2006; Mannix & Neale, 2005) on group attraction.

Theory and research in diversity

Much of the diversity research has been guided by social categorisation theory (Ashforth & Mael, 1989) and social identity theory (Tajfel & Turner, 1986). According to the first theory, people categorise themselves as young versus elderly, man versus woman, or Indian versus Chinese, for example, contingent upon the immediate contexts (Macrae & Bodenhausen, 2000). The second theory posits that people consider those belonging to their own category as *us* or the *in-group*, but those belonging to other categories as *them* or the *out-group* (Hewstone, Rubin, & Willis, 2002). It is the preference for the in-group over the out-group that has been posing a threat to desired outcomes of organisational diversity (Singh & Goh, 2006; Singh, Lim, Sankaran, & Bhullar, 2018; van Knippenberg & Schippers, 2007).

Racial similarity did draw bosses to subordinates (Tsui & O'Reilly, 1989) and made the former evaluate the latter's extra-role act of helping the organisation positively (Tsui, Porter, & Egan, 2002). In contrast, racial dissimilarity evoked a greater likelihood of leaving, being less satisfied with the job or the organisation, and receiving lower performance appraisals by superiors (Tsui, Egan, & O'Reilly, 1992). Lack of direct assessment of in-group versus out-group categorisation in most studies, however, led van Knippenberg and Schippers (2007) to raise "... doubts about the extent to which social categorization processes" were operative (p. 526). Therefore, our first purpose was to dispel such doubts convincingly, using the information integration approach (Anderson, 1981, 1982).

Access to leadership roles has undoubtedly been difficult for people of the traditionally excluded social groups (Eagly & Chin, 2010), for example, African Americans in the United States, Scheduled Castes and Tribes in India, and Malays or Indians in Singapore. Contrary to this practice, diversity in functional and organisational roles has yielded more positive than negative outcomes for organisations (Jackson & Joshi, 2011; Joshi & Roh, 2009; Mannix & Neale, 2005). By crossing race of the more powerful leader with that of the less

powerful member, therefore, we wanted to demonstrate the out-group versus in-group categorisation by race as well as the weaker effect of the member than the leader categorisation on group attraction (Anderson et al., 1973). We thought so because social identity theory regards the in-group preference as a motivated step toward creating and maintaining a positive social identity (Hewstone et al., 2002). Specifically, a more positive evaluation of the in-group than the out-group enables people to believe that the in-group is more valuable. This belief might be bolstered even more when an in-group, instead of out-group, person also leads the team. Such bolstering may happen because the leader is a constant source of inspiration and self-definition for the led (Hogg et al., 2012).

Anderson et al. (1973) reported a greater weight of the leader than the member categorisation in fostering group attraction. From bad to good personality traits of a leader were crossed with the corresponding traits of his group members. Attraction toward groups increased as the given negative traits turned into positive ones. Importantly, the leader traits were more important in making the groups attractive than were the member traits. Supporting this finding, in-group prototypical leaders (i.e., those who made the group special) were also more effective than the non-prototypical in-group ones (Hogg et al., 2012; Platow & van Knippenberg, 2001). As the out-group leader is usually non-prototypical of the in-group, the less endorsement of the out-group than in-group leader was also interpreted as support for the motivated step toward sustaining a positive social identity (Duck & Fielding, 2003). Thus, we predicted that the leader, relative to the member, categorisation should have a stronger effect on group attraction (Hypothesis 1).

According to information integration theory, people process every piece of information in two respects. One is its *scale value*, that is, the location of the information given on the response measure used. In the present scale, the nominal scale values for the out-group (-1) and in-group (+1) by race categorisation should be the same for the leader and the member. Another is the *weight*, that is, the relative importance of the categorisations of the leader and the member. Given the same scale value and the finding of Anderson et al. (1973), the leader categorisation should have a greater relative weight than the member categorisation. Further, the respective relative weights of categorisation as the leader and the member should also remain constant across the out-group versus in-group categorisation. If such weighting indeed holds as Anderson et al. (1973) reported, judgments of group attraction from races should follow the *averaging* rule.[1]

Information integration analysis

To envisage how the relative weights of the leader versus member information and their out-group versus in-group categorisation by race might change within the averaging model of information integration and hence influence group attraction, we present four hypothetical graphs in Figure 1. The separation between the two lines represents the leader categorisation effect; the slope of the line, in contrast, represents the member categorisation effect. The greater the separation between the lines, the stronger is the leader weight. Likewise, the steeper the slope of the line, the stronger is the member weight. Notably, the level that reduces either the separation between lines or the slope of the line in factorial plot of the data is adjudged as relatively more important than the level doing otherwise (Singh, 1991, 2011a; Wills & Moore, 1996). Thus, the pattern in each graph diagnoses the way in which the two pieces of information are weighted in rendering the judgments sought.

In the top left graph of Figure 1, the two lines representing the leader categorisation differ by a constant value of 2 across the levels of the member categorisation. In contrast, the difference between the two levels of the member categorisation over both the levels of the leader categorisation is by 1. We generated such differences across the four graphs to show a uniformly greater weight of the leader categorisation than the member categorisation in group attraction (Anderson et al., 1973). Interestingly, the constant difference between the two lines across the out-group and in-group levels of the member categorisation formed a *pattern of parallelism*. Statistically, such parallelism is equivalent to a stronger main effect of the row factor than the column factor and no interaction between them in analysis of variance (ANOVA). So, the nonsignificant interaction effect indicates that the out-group and in-group categorisations had constant relative weights regardless of the status of people in the team (Anderson, 1981, Singh, 1991).[2] Stated simply, the in-group categorisation heightens attraction; the out-group categorisation, in contrast, dampens it (see, e.g., also Singh & Ho, 2000, for use of this logic in determining repulsion and attraction from attitudes).

The bottom left graph of Figure 1 also displays parallelism. Given the flatness of both the lines, however, only the main effect of leader categorisation would hold. Such pattern illustrates a scenario in which diversity in leadership would be a safeguard against discrimination between subordinates differing in demographic characteristics.

In the top right graph, the separation between the two lines is less with the in-group than out-group member and the slope of the line is shallower for the in-group than the out-group leader. The convergence of the lines on the right means that the in-group categorisation is weighted relatively more than the out-group one (Singh, 2006; Singh & Goh, 2006). Stated differently, group attraction is driven more by preference for the in-group than suspicion of the out-group (Brewer, 1999) leader and member. This pattern agrees with a stronger in-group preference than out-group

[1] When two pieces of information are presented in a Row x Column factorial design, the theoretical judgment of the compound information is $J_{RC} = (w_{Ri}s_{Ri} + w_{Cj}s_{Cj}) / (w_{Ri} + (1- w_{Rj})$, wherein w_{Ri} and s_{Ri} are the respective weight and scale value of a particular level of the row factor, and w_{Cj} and s_{Cj} are the respective weight and scale value of a particular level of the column factor. The relative weights sum to 1, a condition for the averaging rule. If this rule is followed, the factorial plot of the Row x Column effect (i.e., Leader x Member categorisation in the present case) will conform to a pattern of parallelism as in Anderson et al. (1973).

[2] Instead of leading to acceptance of the null hypothesis, the nonsignificant interaction supports the main effects of both the row and column factors on judgment.

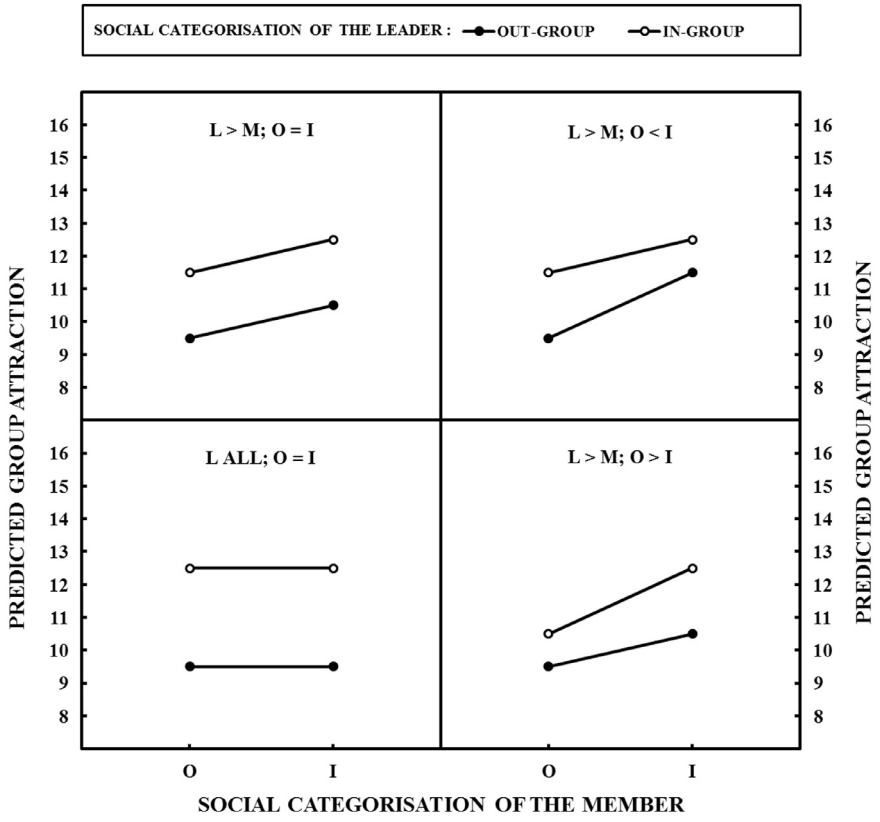


Figure 1. Hypothetical patterns in predicted mean group attraction in the Leader's categorisation x Member's categorisation effects. In each graph, mean group attraction varies with the leader's categorisation (line parameter) and the member' categorisation (listed on the horizontal axis). The graphs on the left represent two cases of constant relative weights; those of the right, in contrast, reflect on opposite changes in relative weights over levels.

suspicion (Halevy, Bornstein, & Sagiv, 2008; McCaslin, 2010; Singh, Choo, & Poh, 1998).

The opposite pattern of divergence in the bottom right graph implies a greater weighting of the out-group than in-group categorisation. There is less separation between the two lines at the level of the out-group than in-group member. Similarly, the slope of the line for the out-group leader is shallower than that of the line for the in-group leader. Put simply, group attraction is dampened more by the out-group than in-group categorisation of leader and member. This pattern is consistent with rejection of out-group in highly competitive intergroup contexts (Mummendey, Klink, & Brown, 2001; Singh, Yeoh, Lim, & Lim, 1997).

On three grounds, we predicted the pattern of parallelism similar to the one displayed in the top left graph of Figure 1 (Hypothesis 2). First, traits of the leader and those of the member resulted in the same pattern of parallelism in group attraction (Anderson et al., 1973). Second, the evidence for the additive model (i.e., just two main effects) of the cross-categorisation effects on intergroup relations is much more than that for other competing models (Singh, 2006). Finally, implicit measures yielded evidence for an equal-size in-group preference and out-group derogation relative to the control condition of unspecified group (McCaslin, 2010, Experiment 3).

Leader reputation as a safeguard

In the initial experiments on leadership effectiveness, the fair and biased leaders were distinguishable in the interpersonal contexts but not in the intergroup ones (Platow, Hoar, Reid, Harley, & Morrison, 1997). Moreover, the leader fairness was important to only those members who had low identification with the in-group (Platow, Reid, & Andrew, 1998; Platow & van Knippenberg, 2001). However, subsequent studies showed that a fair leader conveys to the members that not only would they be accepted in the group but also their contributions to the group would be properly recognised (Lind, 2001). Supporting this view, the perceived fairness of supervisors was positively related to the perceived respect of the subordinates by those supervisors (De Cremer & Tyler, 2005). Importantly, the correlation between measures of fairness and effectiveness was higher when the leader prototypicality was low than when it was high (Janson, Levy, Sitkin, & Lind, 2008).

We interpreted the foregoing interaction effect as implying that the reputation as fair versus in-group favouring should matter more for the out-group than for the in-group leader. Besides, fairness – a signal of the socially inclusive and objective outlook of the leader (De Cremer et al., 2010; Lind, 2001) – should attenuate the leader categorisation effect much more than in-group favouritism. Accordingly, we predicted the Leader categorisation x Reputation effect on group attraction (Hypothesis 3) in Experiment 2. Specifically, the leader categorisation should take on less weight with a fair than an in-group favouring reputation, resulting in a convergent pattern in the Leader categorisation x Reputation effect similar to that in the top right graph of Figure 1. Our second purpose was to test the leader versus member

and fair versus biased categorisations as safeguards against racial differences in group attraction.

Experiment 1

We tested two hypotheses.

Hypothesis 1. The categorisation as a leader should be more important than that as a member in making a team attractive.

Hypothesis 2. The out-group and in-group categorisations by race should have constant relative weights over the levels of the leader and across those of the member.

Method

Participants

Forty male and 40 female Chinese students from a junior college in Singapore participated. Participation was voluntary and in response to an appeal by the college principal. This participant population had a great practical interest, for the first job and organisational choices are made by such naïve people based on hypothetical information (Singh, 1975).

Design

The design was a $2 \times 2 \times 3 \times 3$ (Gender of the participants x Order of stimulus presentation x Leader race x Member race) factorial with repeated measurements on the last two factors. The three races were *Chinese*, *Malay*, and *Indian*. As the participants were Chinese, the Chinese, Malay, and Indian targets were the in-group, the out-group Malay, and the out-group Indian, respectively.

Stimuli

We prepared experimental booklets consisting of (a) an instruction page, (b) six practice examples, and (c) 20 work teams (i.e., stimuli) in which the participant might work after their graduation. Of them, only nine stimuli were of interest.

The remaining 11 stimuli consisted of three *anchors* and eight *fillers*. The *anchor groups* included one leader and two members of the same race and were intended to eliminate *ceiling* and *floor* effects in the response measure (Anderson, 1982; Mellers & Hartka, 1989; Singh, 1995, 1996, 1997). Among the *filler groups*, three had one leader and two members of the same religion (all Hindu, Muslim, or Christian), and five had one leader and one member of either the same religion or gender. Categories other than race were intended to make the hypothesis non-transparent to the participants (Singh, 2006; Singh & Goh, 2006). The previously cited studies that presented the in-group, out-group, and control stimuli in a within-participants design (e.g., McCaslin, 2010) were inadequate because they lacked such experimental precautions.

The 20 stimuli were randomly arranged in the last part of the booklet. However, the order of information presentation (leader-member vs. member-leader) was counterbalanced across half of the participants. Instructions and materials were in English, the medium of instruction in Singapore.

Our design was novel because it tested the predicted constant relative weighting of the out-group and in-group categorisations by a natural group of race, and that too without using a *control condition of unspecified group* (McCaslin, 2010; Singh & Ho, 2000; Singh et al., 1997, 1998). The problem with the control condition of no-information is that it can activate inferences about the missing group information in a within-participants design (Ebenbach & Moore, 2000; Singh, 1991, 2011b). In such a case, withholding of information about the group hardly makes the control condition as such. However, crossing of the two categorisations and the resulting pattern of parallelism overcome this methodological inadequacy of the past work in indicating an equal in-group bias and out-group suspicion (Singh, 2006; Singh & Goh, 2006).

There was another advantage with our design. The main effects calculated from repeated responses of the individual participant should form the Status x Categorisation effect. Whereas the in-group leader, relative to the member, should make the group more attractive, the out-group leader, relative to the out-group member, should turn the group repulsive. Thus, the use of two out-groups in our design allowed us to test the differences between the in-group and the out-group, and that between two out-groups.

Procedure

The experimenter met the participants in a class room. He introduced himself as a university student, and appealed for cooperation.

After distributing the booklets, the experimenter told the participants to read the first page. Instructions stated that the task was to judge attractiveness of some teams consisting of the same age-sex people. Therefore, they should first form an impression of each group and then indicate how attracted they were towards joining the team. There was no right or wrong response, and that the right response was whatever was true with the participants. Participants read the instructions and familiarised themselves with the task by working on the practice examples given. The experimenter checked whether the task was clear and answered any questions the participants had.

Before the data collection, the experimenter verbally repeated the main points of the instructions and urged the participants to judge all groups one by one. Participants indicated how attracted they were towards joining a team along a 21-point scale, ranging from 0 (*lowest*) to 20 (*highest*). Participants worked at their normal pace and finished the task within 30 min. The session was ended with a full debriefing.

Results

Tests of hypotheses

We present mean group attraction as a function of the leader categorisation and the member categorisation in the left graph of Figure 2. To make the pattern stand out, we spaced the three levels of the member categorisation on the horizontal axis according to their respective means in ANOVA (Anderson, 1981; Singh, 2011a).

The clear separation between the three curves indicates the leader categorisation effect; the positive slope of the three curves, in contrast, shows the member categorisation effect.

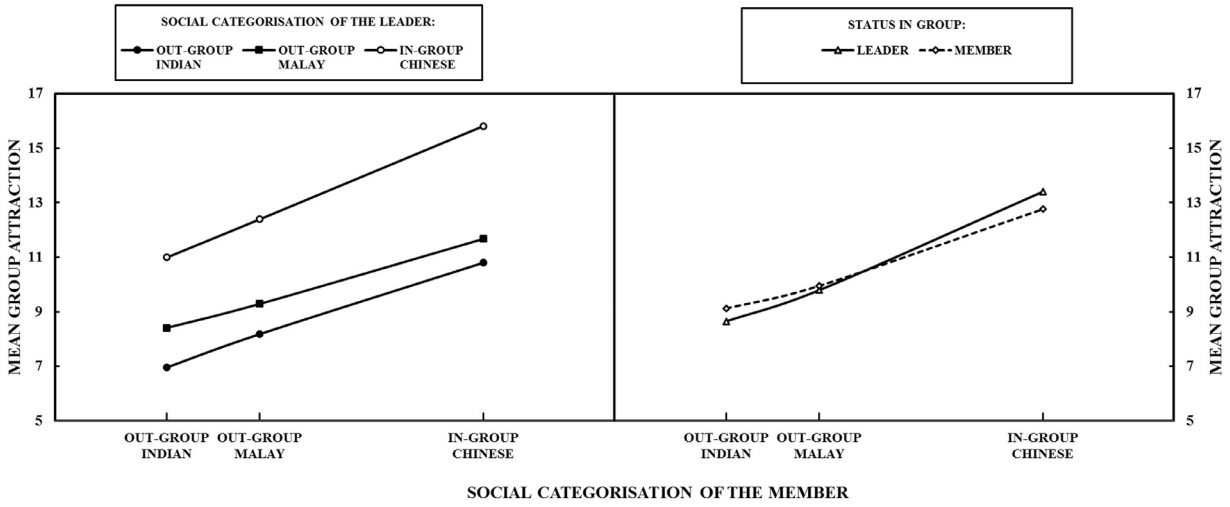


Figure 2. Mean group attraction in the left graph varies with the leader's categorisation (curve parameter) and the member's categorisation (listed in horizontal axis). Mean group attraction in the right graph varies with status in the team (curve parameter) and social categorisation (listed on horizontal axis). Results from Experiment 1.

Importantly, the leader effect is seemingly larger than the member effect, and the curves are essentially parallel.

Results from a mixed-model ANOVA supported both interpretations. The leader effect was significant, $F(2, 152) = 99.22$, $p < .001$, $\eta^2_p = .57$, so was the member effect, $F(2, 152) = 89.81$, $p < .001$, $\eta^2_p = .54$. However, there was no interaction effect, $F(4, 304) = 1.31$, $p = .27$, $\eta^2_p = .02$, supporting Hypothesis 2 about a constant relative weighting of the out-group and in-group categorisations in group attraction.[3]

Bonferroni comparisons among means indicated that the in-group Chinese leader ($M = 13.40$, $SD = 2.84$) made the group more attractive than did the out-group Malay ($M = 9.79$, $SD = 4.26$) or Indian ($M = 8.65$, $SD = 4.39$) leader. Of the out-group leaders, Malay made the group more attractive than did Indian. The same patterns of differences held when the members were in-group Chinese ($M = 12.76$, $SD = 3.03$), out-group Malay ($M = 9.95$, $SD = 3.95$), and out-group Indian ($M = 9.12$, $SD = 3.88$).

Further test of Hypothesis 1

We first averaged the leader effect over the three levels of the member and the member effect over the three levels of the leader for each participant. We then subjected such scores to an ANOVA similar to that reported earlier.

We present mean group attraction driven by status in team and categorisation in the right graph of Figure 2. The crossover of the member curve by the leader one was significant, $F(2, 152) = 9.39$, $p < .001$, $\eta^2_p = .11$. Tests of status simple effects were significant at the out-group Indian, $F(1, 76) = 9.62$, $p < .003$, $\eta^2_p = .11$, and the in-group Chinese, $F(1, 76) = 12.33$, $p < .001$, $\eta^2_p = .14$, levels, but not at the out-group Malay level, $F(1, 76) = 1.87$, $p = .18$, $\eta^2_p = .02$. Notably, group attraction was higher when the leader, compared to the member, was the in-group Chinese but lower when the leader, compared to the member, was the out-group Indian. There was no difference between the out-group Malay leader and member.

Collectively, the results support the hypothesis that the leader categorisation is more important than the member categorisation in making a group attractive. Moreover, group attraction was highest when the leader was an in-group Chinese and lowest when the leader was an out-group Indian, a result illustrating the negative consequence of demographic diversity for group process (Mannix & Neale, 2005; Williams & O'Reilly, 1998). Had we included just the out-group Malay, an erroneous conclusion could have been drawn that the status effect is purely an in-group love (Brewer, 1999). By including both the out-groups of Indian and Malay, we experimentally obtained both the in-group preference and the out-group rejection of the leader in a way never done before.

Majority versus minority status

Our design required participants to join teams in which there were already two persons. After joining a team, therefore, it could naturally be turned into a numerically *minority, majority,* or *homogenous* group for the participant. We averaged the attraction means of teams which conformed to such a classification, and subjected them to a 2×3 (Gender of the participants x Status) mixed-model ANOVA. As expected from the left graph of Figure 2, group attraction significantly increased from minority ($M = 8.21$, $SD = 4.55$) to majority ($M = 11.71$, $SD = 3.45$) and then to homogeneous ($M = 15.81$, $SD = 3.20$) team, $F(1, 156) = 119.91$, $p < .001$, $\eta^2_p = .61$. Thus, both similarity versus dissimilarity with the constituents (Byrne, 1971; Singh & Ho, 2000) and own numerical status (Tolbert, Andrews, & Simons, 1995) within the teams made them repulsive or attractive. Less attraction toward (i) dissimilar than similar and (ii) minority than majority and/or homogeneous teams illustrates the negative consequences of racial diversity for teams (Mannix & Neale, 2005).

[3] The Gender of the participants x Order of information presentation x Social categorisation of the leader effect was significant, $F(2, 152) = 3.12$, $p = .05$, $\eta^2_p = .04$. Specifically, the leader effect was stronger with males than females at the leader-member order, $F(2, 76) = 3.13$, $p = .05$, $\eta^2_p = .08$, but not at the member-leader order, $F(2, 76) = 1.50$, $p = .23$, $\eta^2_p = .04$.

Discussion

We obtained support for Hypotheses 1 and 2. The leader categorisation had a stronger effect on group attraction than the member categorisation. Whereas the in-group leader made the group more attractive than did the in-group member, the out-group leader made the group more repulsive than the out-group member. Also, the in-group and out-group categorisations of the leader had constant relative weights across the corresponding categorisations of the member. Notably, the in-group categorisation in general made the group attractive but the out-group categorisation made it repulsive. Thus, we conclude for the predicted pattern of parallelism in the top left graph but against the remaining patterns in three graphs of Figure 1.

The most and least preferred work groups to the Chinese in Singapore were composed of the same-race Chinese leader and member, and the different race Indian leader and member, respectively. Likewise, the teams that rendered the participant as a racially minority constituent were more repulsive than those according the majority status to the in-group. Participants showed inclination of moving towards teams made up of people like them but moving away from teams made up of people unlike them. Thus, race determines group dynamics in Singapore (Velayutham, 2007) as much as it does elsewhere (van Knippenberg & Schippers, 2007).

On two grounds, nonetheless, one may question our interpretation of the in-group bias. First, the race main effects might have arisen more due to the numerical status of Indians (9%), Malays (13%), and Chinese (74%) in Singapore[4] than their out-group versus in-group categorisation by race. Given such numerical status of the three races in Singapore, people come into contact with more Chinese than either Malay or Indian race, and hence might have developed a more favourable attitude toward the Chinese than the other races. If so, the obtained race effect could be more the familiarity effect (Moreland & Zajonc, 1982) than the diversity effect. Second, Indians, Malays, and Chinese in Singapore are stereotyped as *argumentative, happy-go-lucky,* and *industrious*, respectively (Khoo & Lim, 2004). Since these stereotypes represent the undesirable-desirable continuum of group members, it is possible that the Chinese participants responded more to these stereotypes than out-group versus in-group categorisation by race (Singh et al., 1998). In addition to testing Hypothesis 3, therefore, we dealt with these concerns with Experiment 1's results in Experiment 2.

Experiment 2

Experiment 2 retested Hypotheses 1 and 2, and tested Hypothesis 3 about an interaction between the leader categorisation and reputation. To remove the ambiguity underlying the categorisation bias interpretation of the race effect found in Experiment 1, we included participants from two racial groups. If our in-group preference and out-group suspicion interpretations were correct, then race of the participants should not interact with the categorisation by race in Experiment 2 (Hypothesis 4a). However, if the hypothesis of either numerical status or stereotypes were correct, then there should be an interaction effect (Hypothesis 4b).

[4] (http://en.wikipedia.org/wiki/Race_in_Singapore) downloaded on July 7, 2014.

Method

Participants

Thirty-two Chinese and 32 Malay students from a population comparable to that in Experiment 1 participated. There were 12 females in each racial group.[5]

Design

The design was a $2 \times 2 \times 3 \times 3 \times 2$ (Race of the participants: Chinese vs. Malay x Order of information presentation: Leader-member vs. Member-leader x Member categorisation x Leader categorisation x Leader reputation: fair vs. biased) factorial, with repeated measurements on the last three factors ($ns = 16$ per cell). For the Chinese participants, the in-group leader and member were Chinese, but the two out-groups were Malay and Indian, respectively. For the Malay participants, the in-group leader and member were Malays and the two out-groups were Chinese and Indian, respectively. Hence, our manipulation of out-group versus in-group by race was clearer in the present than previous experiment.

Our design was again novel in two respects. First, we explored leadership position and reputation as safeguards against potential negative consequences of racial diversity among workforce. Specifically, the interaction effect of fairness (van Knippenberg et al., 2007) on a new measure of group attraction, instead of the generally studied leadership effectiveness (Hogg et al., 2012) or positive organisational behaviours such as cooperation and organisational citizenship (De Cremer et al., 2010), was investigated. Second, the groups generated by categorisation of the people within the team and the leader reputation were again presented in a within-participants design (Hogg et al., 2012). Given such a scope for comparative judgments between the targets, the predicted interaction effect should more appropriately be interpretable as an outcome of the cognitive elaboration processes (Jackson & Joshi, 2011) underlying fairness intervention (Lind, 2001; Singh et al., 2018; van Knippenberg et al., 2007) than of the identification with groups (Platow et al., 1998; Platow & van Knippenberg, 2001).

Stimuli and response measure

We prepared the stimuli and measured group attraction in the same ways as in Experiment 1. However, three changes were notable. First, the names of males and females from different races, religion, or gender were used to describe the leader and the member(s) in the anchor, filler, and main stimuli to make the manipulations of race further non-transparent. Second, the 18 main stimuli were presented randomly with four anchor and 18 filler stimuli. Finally, the leader was also described as one who gave due credit to all members regardless of their background characteristics (fair) or only looked after interests of people of own category well (in-group biased).

[5] There was no gender effect in Experiment 2. So, it was dropped from the design.

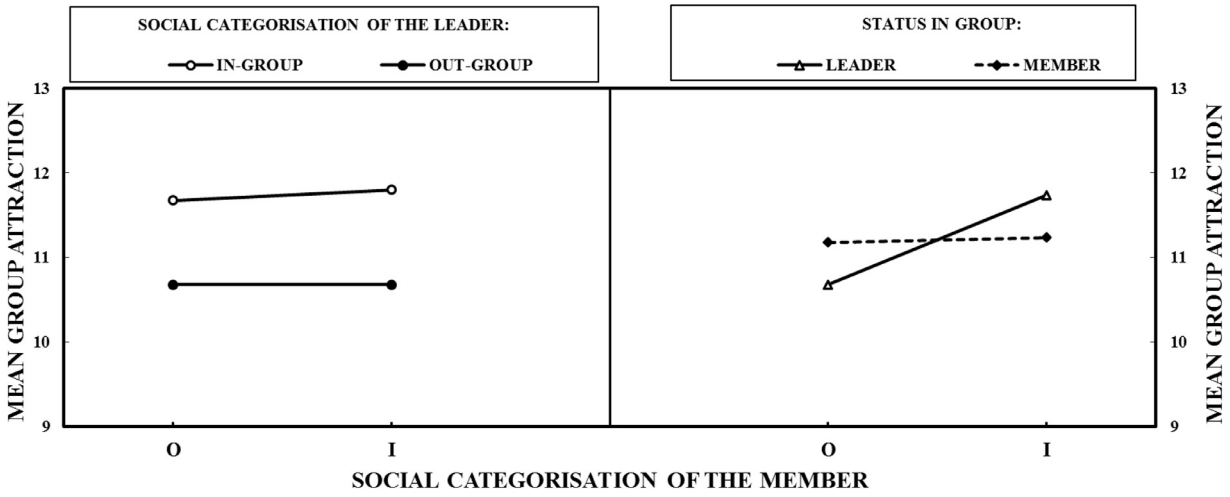


Figure 3. Mean group attraction in the left graph varies with the leader's categorisation (line parameter) and the member's categorisation (listed in horizontal axis). Mean group attraction in the right graph varies with status in the team (line parameter) and social categorisation (listed on horizontal axis). Results from Experiment 2.

Procedure

We conducted the study in groups of 15-20 participants at a time. Each session included participants from different races and genders with a teacher always present at each session.

At the beginning of each session, the teacher introduced the experimenter as a university student, and appealed for cooperation in the study. The experimenter then collected the data in the same ways as in Experiment 1.

Results

Initial analyses

In a five-way mixed-model ANOVA with repeated measurements on the last three factors, the main effects of leader categorisation, $F(2, 120) = 9.77$, $p < .001$, $\eta^2_p = .14$, and reputation, $F(1, 60) = 78.45$, $p < .001$, $\eta^2_p = .57$, were significant, so were the Order of information presentation x Leader reputation, $F(1, 60) = 6.39$, $p < .01$, $\eta^2_p = .10$, and Leader categorisation x Leader reputation, $F(2, 120) = 4.87$, $p < .009$, $\eta^2_p = .08$, effects. Attraction toward the group led by the in-group person ($M = 11.72$, $SD = 3.59$) was higher than that led by the out-group Malay/Chinese ($M = 10.79$, $SD = 3.56$) and Indian ($M = 10.57$, $SD = 3.68$) targets.[6] Given no moderation of any of the effects by race of the participants, Fs(1/2, 60/120) < 1.37, ps $> .25$, the in-group versus out-group categorisation by race (Hypothesis 4a) seemed more plausible than the use of the racial information as an indicator of either the numerical status or racial stereotypes in Singapore (Hypothesis 4b).

[6] No difference between the out-group Indian and the other out-group (i.e., Malay for the Chinese and Chinese for Malays) may be due to the activation of only the in-group versus out-group categorisation. In Experiment 1, all participants were Chinese. In contrast, participants from both the Chinese and Malay races were present in each data gathering session. Given the context-sensitivity of the self-categorisation process, our results should not be surprising.

Test of Hypothesis 1

To contrast the attraction toward the in-group with that toward one out-group (Malay and Indian for the Chinese; Chinese and Indian for the Malays), we first averaged the responses over the two out-groups and did another ANOVA. In the left graph of Figure 3, we present the Leader categorisation x Member effect. Given the significant main effect of the leader categorisation, $F(1, 60) = 14.23$, $p < .001$, $\eta^2_p = .19$, but no effect of the member categorisation and their interaction, Fs(1, 60) = 0.08, ps = .78, respectively, the obtained pattern matches with the one in the bottom left graph of Figure 1. That is, the supremacy of the leader categorisation in making the group attractive or repulsive rendered the racial diversity between members rather redundant. This made the test of Hypothesis 2 ambiguous.

For sake of completeness, we calculated the leader and member effects as in Experiment 1, and subjected them to a status by categorisation ANOVA. The interaction effect was significant, $F(1, 60) = 12.98$, $p < .001$, $\eta^2_p = .18$. This effect displayed in the right graph of Figure 3 indicates that the crossover interaction is identical on both the sides, $F(1, 60) = 12.98$, $p < .001$, $\eta^2_p = 18$. That is, group attraction was higher when the leader, compared to the member, was from the in-group but lower when the leader was from the out-group. Therefore, the previous result of a greater importance of the leader than the member in making a group attractive or repulsive was supported even better.

Test of Hypothesis 3

Given the nonsignificant effects of race of the participants and the member categorisation in the ANOVAs reported above, we dropped both of these factors from the design. Thus, the reported results are from a $2 \times 2 \times 2$ (Order of information presentation x Leader categorisation x Leader reputation) mixed-model ANOVA, with repeated measurements on the last two factors (ns = 32 per cell).

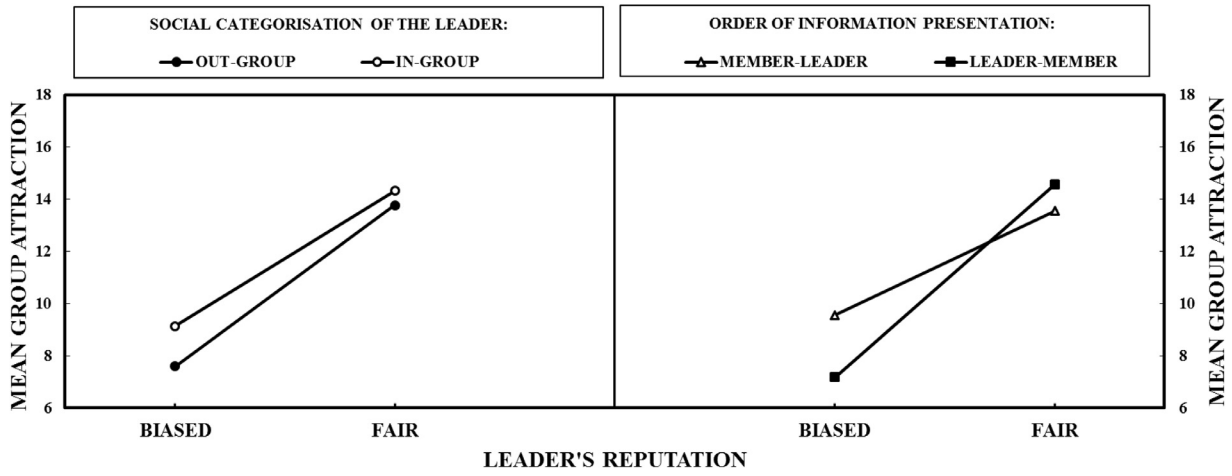


Figure 4. Mean attraction toward groups led by in-group and out-group leaders (line parameter) and the leader's reputation (listed in horizontal axis) in the left graph. Mean attraction toward groups led by leaders with information presented before and after the member's categorisation (line parameter) and the leader's reputation (listed in horizontal axis) in the right graph. Results from Experiment 2.

Social categorisation x Reputation effect

In the left graph of Figure 4, we present the Leader categorisation x Leader reputation effect, $F(1, 62) = 6.16$, $p = .02$, $\eta^2_p = .09$. The reputation effect was slightly stronger with the out-group, $F(1, 63) = 73.00$, $p < .001$, $\eta^2_p = .54$, than the in-group, $F(1, 63) = 62.18$, $p < .001$, $\eta^2_p = .50$, leader as suggested by the previous correlational finding (Janson et al., 2008). More important, the difference between attraction toward the in-group ($M = 9.14$, $SD = 4.88$) and out-group ($M = 7.60$, $SD = 4.02$) leaders in the in-group bias condition, $F(1, 63) = 12.96$, $p < .001$, $\eta^2_p = .17$, was about two times as large as the difference between attraction toward the in-group ($M = 14.33$, $SD = 4.02$) and out-group ($M = 13.77$, $SD = 4.31$) leaders in the fairness condition, $F(1, 63) = 5.83$, $p = .02$, $\eta^2_p = .09$. Supporting Hypothesis 3, the leader fairness lessened racial differences between leaders in group attraction.

Order of information presentation x Leader reputation effect

Unlike in Experiment 1, there was no member categorisation effect on group attraction. This null effect agreed more with our hypothesised buffering by the leader categorisation against the negative effect of racial diversity among members than the failure of the manipulation about the member. Had there been the manipulation failure, there might not have been the moderation of the leader reputation effect by the order of information about the group composition, $F(1, 60) = 6.39$, $p = .01$, $\eta^2_p = .10$, as displayed in the right graph of Figure 4.

The difference between attraction toward the fair ($M = 14.56$, $SD = 3.95$) and biased ($M = 7.18$, $SD = 4.41$) leaders at the leader-member order, $F(1, 31) = 76.32$, $p < .001$, $\eta^2_p = .71$, was about two times as large as the corresponding difference between the fair ($M = 13.54$, $SD = 4.17$) and biased ($M = 9.56$, $SD = 4.42$) leaders at the member-leader order, $F(1, 31) = 17.99$, $p < .001$, $\eta^2_p = .37$. The order effect was nonsignificant when the leader was fair, $F(1, 62) = 1.02$, $p = .32$, $\eta^2_p = .02$, but significant when the leader was biased, $F(1, 62) = 4.65$, $p = .04$, $\eta^2_p = .07$. Essentially, then, the in-group favouring leader made the group more repulsive particularly when such information was presented first than when it was presented after the member categorisation, a kind of primacy effect (Anderson, 1981) of the leadership fairness heuristic (Lind, Kray, & Thompson, 2001).

Discussion

Experiment 2 yielded four results. First, both the Chinese and Malay participants were more attracted to groups led by the in-group than the out-group. This leader categorisation effect, independent of race of the participants, indicates that the racial information was processed as in-group versus out-group instead of a cue to the numerical status or stereotypes of Chinese, Malays, and Indians in Singapore. Second, the leader categorisation alone determined group attraction, replicating the greater importance of the leader than the member in making any group attractive or repulsive. Third, the leader reputation moderated the effect of out-group versus in-group categorisation by race. Although the groups led by the in-group person were more attractive than those led by the out-group person, fairness of the leader minimised such difference. Finally, the no-member categorisation effect on group attraction was because of its redundancy with the two given pieces of information about the leader. Since the order of presentation of information about the member moderated the leader reputation effect, the member categorisation was attended to but totally discounted. Apparently, the leader and fair categorisations could be effective safeguards against the negative effect of racial diversity within group members and between leaders, respectively.

General discussion

Key contributions

Our findings enrich the diversity and leadership literatures in two key ways. First, people of different races in a team are categorised as in-group versus out-group. The former categorisation makes the group attractive; the latter categorisation,

by contrast, makes the group repulsive. Given that people get initially drawn to those teams that are made up of others like themselves (Byrne, 1971), there should now be no doubt about the activation of positive social identity motivations in teams consisting of people of diverse races and positions (van Knippenberg & Schippers, 2007).

Second, organisational interventions of leadership status and fairness can be effective safeguards against the negative effect of racial diversity on group attraction. In Experiment 1, the leader categorisation was more important than the member categorisation. When information about leadership status and fairness were readily accessible, the former eliminated racial differences among members and the latter minimised racial differences among leaders (Jackson & Joshi, 2011).

Overall, then, our integration-theoretical analyses of group attraction succeeded not only in showing the motivated intergroup biases activated by racial diversity but also in offering two ways of reducing racial differences in group attraction. We demonstrate that the negative consequences of racial diversity among peers for group attraction can be reduced and/or eliminated by placing people of different backgrounds in leadership roles, and that among the leaders can be minimised by requiring them to be fair. Given such evidence for the moderating effect of leader fairness, we agree with van Knippenberg et al.'s (2007) observation that "... remarkably little research has been done on the interactive effects of leader fairness and other aspects of leadership ... and here potentially lies the greatest challenge for research in leadership and fairness" (p. 129). Our research and that of De Cremer et al. (2010) can be regarded as needed responses to that challenge.

Given no fillers to hide the manipulated fair versus in-group biased reputation, however, one may doubt whether the leader reputation was an effective safeguard against the adverse effect of the leader categorisation on group attraction or a mere result of the *reactive method* used. We dismiss such a doubt about the internal validity of the moderating effect of the reputation intervention on two grounds. First, the pattern of convergence displayed in the left graph of Figure 4 is a convincing demonstration of the simultaneous operation of the motivational and cognitive processes in group attraction. The in-group leader was preferred to the out-group one, replicating the in-group bias driven by motivational considerations (Hewstone et al., 2002; Hogg et al., 2012) in leadership endorsement (Platow et al., 1997, 1998; Platow & van Knippenberg, 2001; Singh et al., 2018). Besides, the reputation effect was stronger with the out-group leader than with the in-group one. Such a pattern of convergence in the interaction effect agrees with a simple (i.e., *they all are alike*) versus complex (i.e., *we are so different from each other*) cognitive representation of the out-group versus the in-group categories (Ostrom & Sedikides, 1992). Considered from such cognitive representation of groups, a larger effect of the reputation information is theoretically expected for attraction toward the out-group than the in-group. Second, the literature also reported the primacy effect of the leadership heuristic (Lind et al., 2001). That is, the information about the justice orientation of the leader is more effective when it is presented first than last. The right graph of Figure 4 conformed to such a primacy effect at least in the condition of in-group bias.

Future directions

Given the high internal validity of our results and the success of the previous integration-theoretical analyses of applied problems (Ebenbach & Moore, 2000; Levin, Louviere, Schepanski, & Norman, 1983; Singh, 1975, 1995, 1996, 1997; Wills & Moore, 1996), we recommend increased use of experimentation (Anderson, 1981, 1982, 2013) in diagnoses of the weighting patterns in the effects of diversity in organisations. In this research, we used one visible category of race and two organisational categories of leadership position and leader reputation in mitigating the negative consequences of racial diversity for group attraction. However, diversity can be in multiple visible categories of age, dress, race, and sex as well as invisible categories of attitudes, knowledge, and values (Mannix & Neale, 2005). Likewise, organisational interventions can be in the forms of leader fairness (Lind, 2001; van Knippenberg et al., 2007) and vision (Greer, Homan, De Hoogh, & Den Hartog, 2012), assigning greater responsibility to managers (Kalev et al., 2006), and requiring chief executive officers (CEOs) to be inclusive (Groysberg & Connolly, 2013), in minimising or eliminating the negative consequences of diversity for organisations.

The patterns of parallelism and non-parallelism that we used to diagnose weights of the diversities manipulated can now be used to investigate complex processes activated by other experimental manipulations. For example, the majority in-group members but minority out-group members or vice versa with same in-group or out-group leader of teams (Tolbert et al., 1995) can trigger different levels of cognitive elaboration processes and social identity concerns. Nevertheless, those processes can be tracked down by similar patterns of parallelism, convergence, divergence, and crossovers arising out of the constant or changing relative weights within the averaging model (Anderson, 1981, 1982, 2013; Singh, 2011a). Further, the weights can be expected to change depending upon whether the participant is going to be a member or the leader in the team. In the current research, we studied only the member role for the participant. In the future research, it might be more profitable to manipulate both the roles of leader and member for the participants in teams varying in the number of the in-group and out-group members as in contemporary global corporations.

We now advocate a combined field-experimental approach to studying group performance in applied field situations of business and government. Hands-on field experiences are essential to understand goals and motivations of different members of any group. Such experiences, however, are basically correlational with inevitable ambiguities as we pointed out in the introduction (Jackson & Joshi, 2011; van Knippenberg & Schippers, 2007). Development of diversity theory would require experimental analyses with systematic manipulations of variables that seem important in field situations. Such experimental work can yield causal conclusions to extend or modify correlational suggestions. Moreover, controlled experiments have the notable advantage of allowing study of variables poorly represented in actual field situations as potential guides to improving group interaction.

When the same stimuli prepared from a factorial design are presented more than once in either the laboratory or field study, the integration-theoretical analysis allows diagnosis of the rule at the level of individual participants

(Anderson, 1982; Singh, 1995). Individual differences might be in the integration rules or in the subjective values assigned to the information given (Anderson, 1982; Singh, 1997). Given only one rating of the stimuli presented, it was impossible to undertake such individual analysis in the present experiments. Nevertheless, future combined field-experimental research should take advantage of this leverage provided by the integration-theoretical analysis (Ebenbach & Moore, 2000; Singh, 1996, 1997).

Implications and conclusion

Brewer (1999) argued that in-group love does not necessarily require out-group hate. Our findings suggest a modification in her conceptualisation of the intergroup bias: attraction to the in-group seemed to be as pervasive as repulsion from the out-group. Thus, a positive social identity is affirmed and maintained in the teams by both upward and downward comparisons of the in-group with the relevant out-group (Singh et al., 1997, 1998). It was the overemphasis on only the positive distinction between groups that led McCaslin (2010) to show that out-group derogation is as important and pervasive as is in-group preference in intergroup attitudes. Our finding of the parallelism pattern in Experiment 1 confirms his result and extends it from North Americans to South-east Asians.

On the other hand, our findings cast doubt on group identification as a critical moderator of the social categorisation effect on leadership effectiveness. In previous studies (Platow et al., 1998; Platow & van Knippenberg, 2001), only participants who had low identification with the in-group endorsed a fair leader more than an in-group favouring one. In Experiment 2, participants might have had high identification with their races because the Government of Singapore has been aiming at *one society* but *separate racial identities* (Lee, 1995). Nonetheless, both the Chinese and Malay participants were more attracted to the group led by a fair than an in-group biased leader. To us, therefore, identification may be sufficient but not necessary for moderating the categorisation effect on group attraction.

The applied implications of our findings lie in offering two organisational interventions for effective management of the diversity practices in organisations. One is the placement of more people from the traditionally unrepresented groups in leadership roles. As we showed, leadership roles to people of different races reduced the racial differences among members in Experiment 1 and altogether eliminated it in Experiment 2. Another intervention for organisations would be to make fairness mandatory for managers and leaders of teams, departments, and organisations. As we showed, the difference between the in-group and out-group leaders was less when they were fair to all than when they were prototypical of their respective in-groups.

In sum, inadequate attention to contexts such as leaders and culture of transparency and meritocracy might not only obscure "the important consequences of diversity in organizations" but also hamper "efforts to synthesize and integrate the cumulative evidence from the past..." (Joshi & Roh, 2009, p. 622). By performing two laboratory experiments on group attraction, we show that racial diversity does produce repulsion from groups that are made up of other races, and hence poses a threat of turning the otherwise desired diverse organisations into homogeneous ones (Scheider, Smith, Taylor, & Fleenor, 1998). Our key contribution lies in demonstrating that such negative consequences of demographic diversity in general and racial diversity in particular for workgroups can be minimised by promoting diversities in leadership roles and fairness reputations.

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